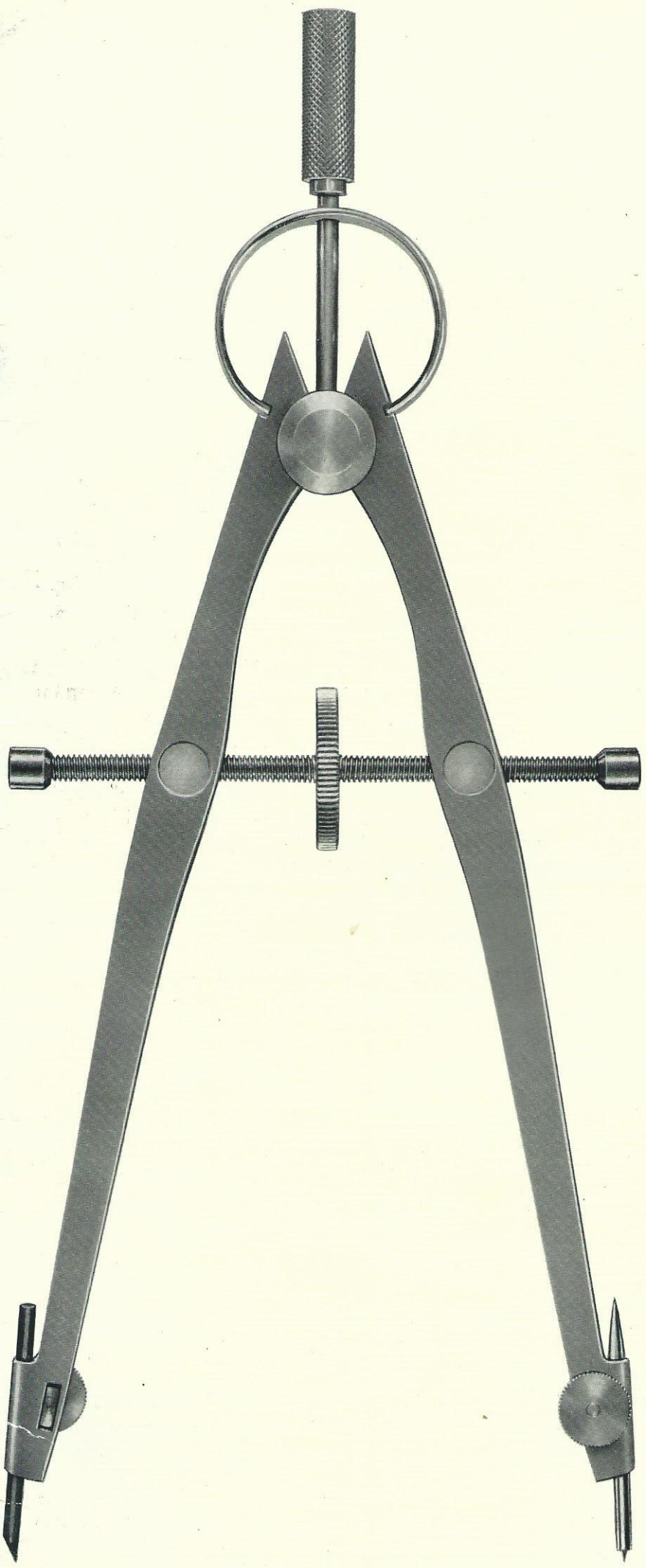
THORNTON



Drawing instruments

PIC slide rules

Drawing equipment

CAUSER & CO.,
Drawing Office Suppliers
216, Goldhawk Road, W.12
SHEpherds Bush 2366

Effective February 1962

Introduction

A G THORNTON LIMITED
Wythenshawe, Manchester 22
England
Telephone Wythenshawe 2277
Telegrams Drawing Manchester

This catalogue introduces more new developments related to Technical Drawing and Technical Educational Equipment and embodies the results of still further market research carried out since the introduction of the earlier edition in the summer of 1961.

DRAWING INSTRUMENTS

The description of the ranges of instruments has been changed to conform more realistically to quality standards. The principle of designing, manufacturing and marketing separate instruments for each specific purpose is the basis of the Senior Professional and Standard Professional ranges in order to achieve the highest effective standards in technical drawing. The cost of a first quality set of drawing instruments comprising separate instruments for each specific purpose is relatively insignificant compared with that of equipping and remunerating the draughtsman, and it is essential to realise that the drawing instruments are the 'working tools' of the draughtsman.

For junior students and the occasional user, where price can be an important factor, certain composite type instruments have been included in the ranges where appropriate, subject to the overriding importance of offering instruments which are functionally sound.

The logical build up of a full set of drawing instruments is shown on page 8 (in the description of the Versatility cases) and warrants careful consideration by the prospective purchaser in selecting the most suitable combination of instruments for individual requirements.

The recently introduced Versatility cases have been favourably received and are appreciated as filling a long felt need. A further development from this is the introduction of the resilient foam plastic lined cases with individual recesses for each instrument and these are now being supplied as standard in the Senior Professional, Standard Professional and Student ranges following their excellent reception in the course of market research.

The previous range of drawing instruments and sets has now been withdrawn with the exception of a selection of sets which, with certain modifications, are retained and shown on page 10.

SLIDE RULES

The design, accuracy and scale combination of the new plastic double face type slide rules have been so well received that it has been decided to rationalise the former range of slide rules and those retained are listed together with the addition of the Radiation slide rule.

GENERAL

The selection of materials for the various products has been made after careful study to ensure suitability for the appropriate purpose and particular attention is paid to maintaining high quality standards and functional efficiency.
Drawing instruments feature the Lansin stainless finish. The outstanding properties of this development are:
Attractive appearance and high resistance to tarnishing and corrosion. Freedom from internal stress with no tendency to peel or flake. Good hardness and durability and immunity from attack by many corrosive media.
All Thornton products are guaranteed against defects in materials and workmanship and if treated with reasonable care and attention will give a lifetime of good service.

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SLIDE RULES

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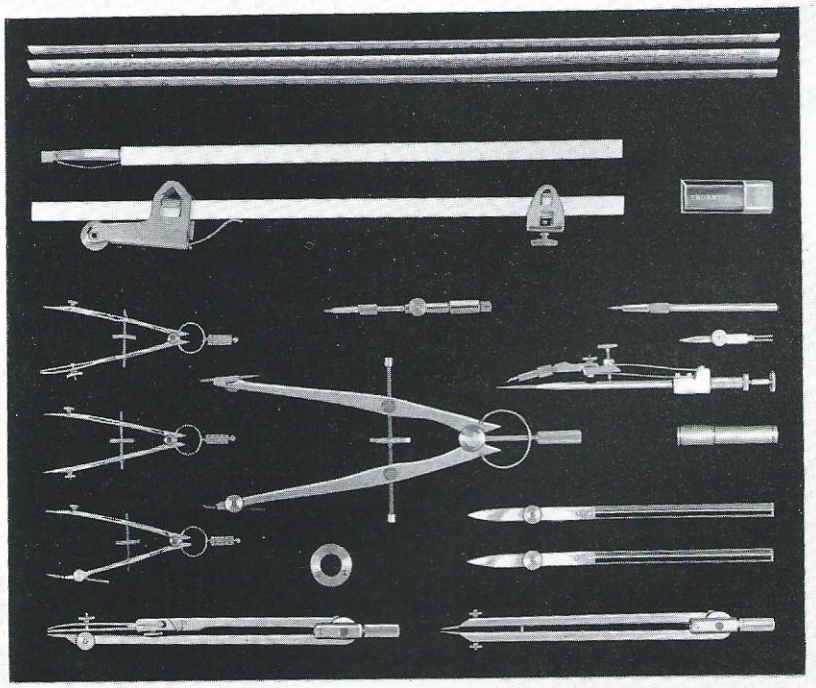
Senior professional range

All sets in the Senior professional range are contained in rexine covered cases with the new resilient linings in the lid and base, and individual recesses for each item. This design gives better protection for the contents, points, etc, and the instruments are more easily accessible. The foam plastic linings are cleaner in use than the conventional velvet lining. Additional items may be accommodated between the recesses if desired simply by laying them on the lining in the base. On closing the case the contents are firmly secured between the two linings which act as pressure pads. For particulars of the new Versatility cases without individual recesses see pages 8 and 9.

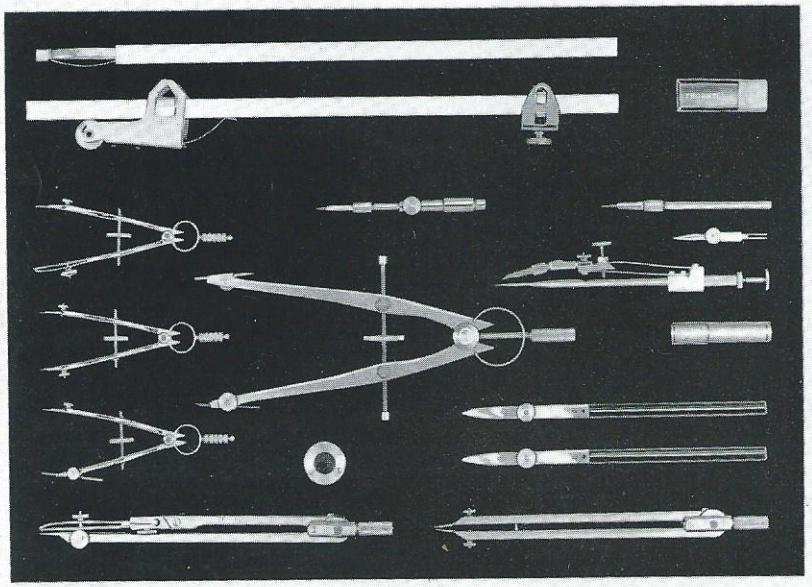
Designed for the professional user who desires the highest practicable standard.
Lansin stainless finish.



P 207 PRESENTATION SET

For pencil, divider and pen range up to 17″ radius; 2 ruling pens, fixed centre spring bow and various items of equipment.

MS 44	Large universal spring pencil compass
MS 20	Dividers
MS 50	Spring bow pencil
MS 49	Spring bow dividers
MS 51	Spring bow pen
MS 16D	Universal beam compass
MS 651	Adaptor for beam compass points
MS 603	Pencil point for beam compass
MS 9	Pen compass (includes MS 605 pen point for use with beam compass)
MS 85	Ruling pen, swivel nib
MS 86	Ruling pen, swivel nib
MS 65	Fixed centre spring bow (pencil and pen)
MS 950	Centre piece (horn centre)
*MS 901P	Plastic container, spare leads and needles
MS 903	Container, spare nuts and bolts
F 5255	8″ Universal curve
F 2724B	6″ Protractor, semicircular
PIC 153	10″ Trig-angle adjustable set square
F 4946	8″ 45° Transparent set square
F 4947	10″ 60° Transparent set square
3-F 2766	12″ boxwood ivorine edge oval section scales, patterns 13T, 84T, 85T (or to selection)

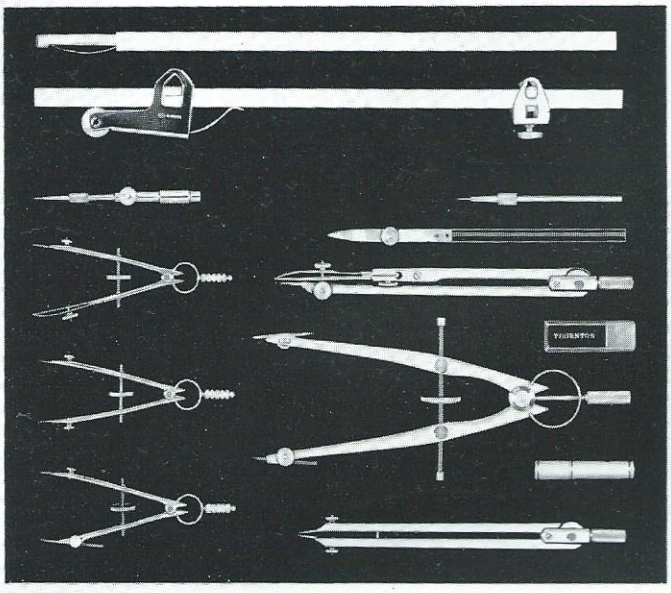


P 217 UNIVERSAL SET

For pencil, divider and pen range up to 17″ radius; 2 ruling pens, fixed centre spring bow.

MS 44	Large universal spring pencil compass
MS 20	Dividers
MS 50	Spring bow pencil
MS 49	Spring bow dividers
MS 51	Spring bow pen
MS 16D	Universal beam compass
MS 651	Adaptor for beam compass points
MS 603	Pencil point for beam compass
MS 9	Pen compass (includes MS 605 pen point for use with beam compass)
MS 85	Ruling pen, swivel nib
MS 86	Ruling pen, swivel nib
MS 65	Fixed centre spring bow (pencil and pen)
MS 950	Centre piece (horn centre)
*MS 901P	Plastic container, spare leads and needles
MS 903	Container, spare nuts and bolts

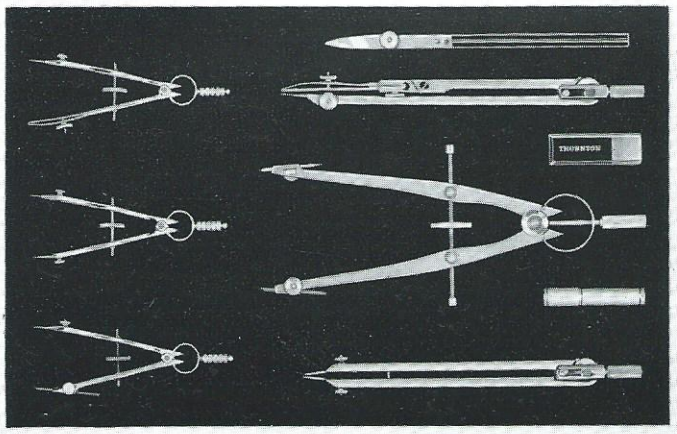
Senior professional range



P 227 FULL SET

For pencil, divider and pen range up to 17″ radius and ruling pen

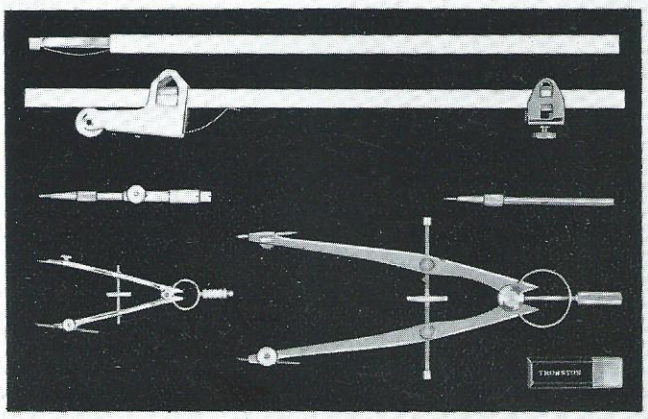
MS 44 Large universal spring pencil compass
MS 20 Dividers
MS 50 Spring bow pencil
MS 49 Spring bow dividers
MS 51 Spring bow pen
MS 16D Universal beam compass
MS 651 Adaptor for beam compass points
MS 603 Pencil point for beam compass
MS 9 Pen compass (includes MS 605 pen point for use with beam compass)
MS 85 Ruling pen, swivel nib
*MS 901P Plastic container, spare leads and needles
MS 903 Container, spare nuts and bolts



P 237 FULL SET
without beam compass

For pencil, divider and pen range up to 5″ radius and ruling pen

MS 44 Large universal spring pencil compass
MS 20 Dividers
MS 50 Spring bow pencil
MS 49 Spring bow dividers
MS 51 Spring bow pen
MS 9 Pen compass
MS 85 Ruling pen, swivel nib
*MS 901P Plastic container, spare leads and needles
MS 903 Container, spare nuts and bolts



P 247 PENCIL SET

For pencil range up to 17″ radius (with option of conversion to dividers)

MS 44 Large universal spring pencil compass
MS 50 Spring bow pencil
MS 16D Universal beam compass
MS 651 Adaptor for beam compass points
MS 603 Pencil point for beam compass
*MS 901P Plastic container, spare leads and needles

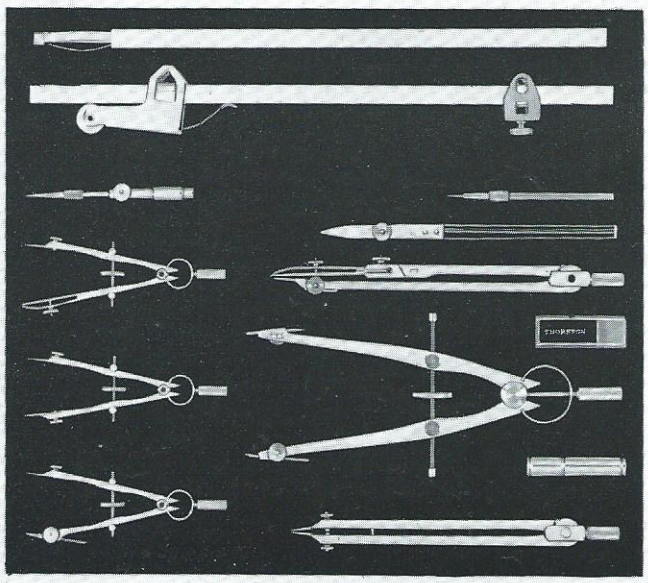
*MS 901P Plastic container includes .08″ needle point for conversion, where applicable, of MS 44, MS 50 and MS 603 for use as dividers.

Details of separate instruments are shown on page 6.

Standard professional range

All sets in the Standard Professional and Student ranges are contained in rexine covered cases with the new resilient linings in the lid and base, and individual recesses for each item. This design gives better protection for the contents, points, etc, and the instruments are more easily accessible. The foam plastic linings are cleaner in use than the conventional velvet lining. Additional items may be accommodated between the recesses if desired, simply by laying them on the lining in the base. On closing the case the contents are firmly secured between the two linings, which act as pressure pads. For particulars of the new Versatility cases without individual recesses see pages 8 and 9.

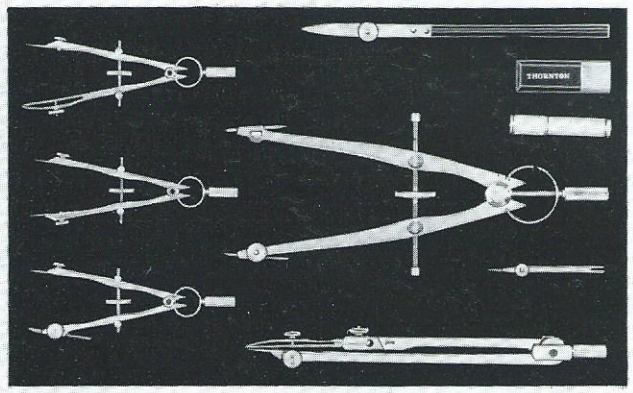
Designed for the professional user and advanced student.
Lansin stainless finish



T 307 FULL SET

For pencil, divider and pen range up to 17″ radius and ruling pen.

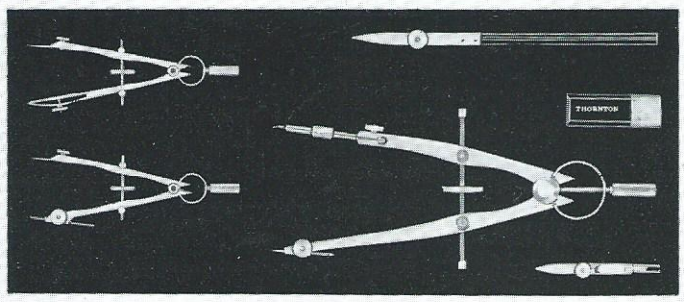
MS 44	Large universal spring pencil compass
T 74	Dividers
T 153	Spring bow pencil
T 152	Spring bow dividers
T 154	Spring bow pen
MS 16D	Universal beam compass
MS 651	Adaptor for beam compass points
MS 603	Pencil point for beam compass
T 9	Pen compass (includes MS 605 pen point for use with beam compass)
T 85	Ruling pen
*MS 901P	Plastic container, spare leads and needles
MS 903	Container, spare nuts and bolts



T 317 GENERAL PURPOSE SET

For pencil, divider and pen range up to 5″ radius and ruling pen.

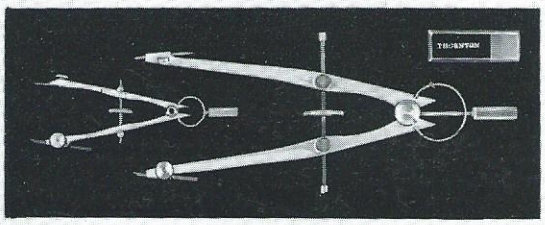
MS 44	Large universal spring pencil compass
T 153	Spring bow pencil
T 152	Spring bow dividers
T 154	Spring bow pen
T 9	Pen compass
MS 602	Divider point (for conversion of T 9 compass to dividers)
T 85	Ruling pen
MS 901P	Plastic container, spare leads and needles
*MS 903	Container, spare nuts and bolts



T 327 COMPOSITE SET

For pencil and pen range up to 5″ radius (with option of conversion to dividers) and ruling pen.

MS 54	Large universal spring compass with interchangeable pencil and pen points.
T 153	Spring bow pencil
T 154	Spring bow pen
T 85	Ruling pen
*MS 901P	Plastic container, spare leads and needles



T 337 PENCIL SET

For pencil range up to 5″ radius (with option of conversion to dividers).

MS 44	Large universal spring pencil compass
T 153	Spring bow pencil
*MS 901P	Plastic container, spare leads and needles

*MS 901P Plastic container includes .08″ needle point for conversion, where applicable, of MS 44, MS 54, T153 and MS 603 for use as dividers.

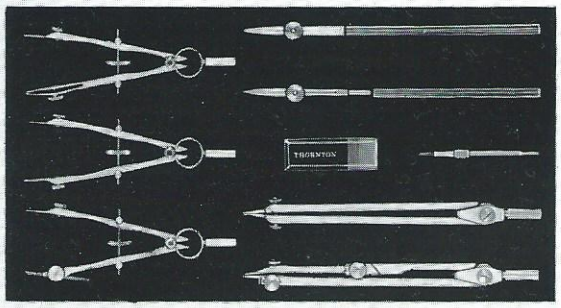
Details of separate instruments are shown on page 6

Student range

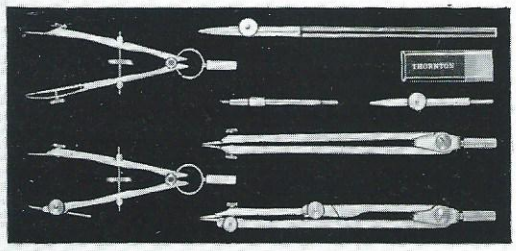
The Thornton Jaywess instruments designed for the technical student. Lansin stainless finish.

LENGTHENING BARS

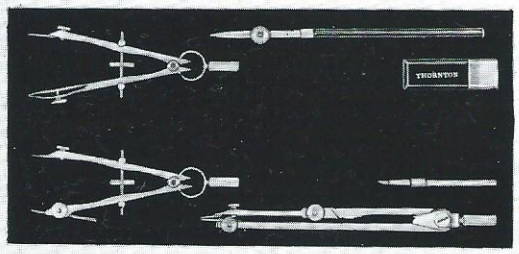
Since the radius of circle obtainable from the student range of sets is adequate for normal requirements without the lengthening bar, sets S 406, S 416, S 426 and S 436 have been illustrated without this item. It will be observed however that the lengthening bar may be included where desired by adding suffix letter L to the catalogue number.



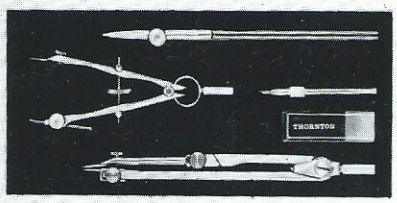
S 406	FULL SET
J 3	Compass half set with J 15 pencil, J 16 divider and J 17 pen points
J 6	Dividers
J 61	Spring bow pencil
J 60	Spring bow divider
J 62	Spring bow pen
J 12	Ruling pen, spring nib pattern
J 14	Spare handle for use with compass points J 15, J 16, J 17
*J 21P	Plastic container, spare leads
S 406L	As above with addition of J 7 lengthening bar



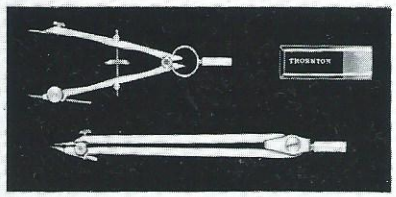
S 416	GENERAL PURPOSE SET
J 3	Compass half set with J 15 pencil, J 16 divider and J 17 pen points
J 6	Dividers
J 61	Spring bow pencil
J 62	Spring bow pen
J 12	Ruling pen, spring nib pattern
*J 21P	Plastic container, spare leads
S 416L	As above with addition of J 7 lengthening bar



S 426	UTILITY SET
J 3	Compass half set with J 15 pencil, J 16 divider and J 17 pen points
J 61	Spring bow pencil
J 62	Spring bow pen
J 14	Spare handle for use with compass points J 15, J 16, J 17
*J 21P	Plastic container, spare leads
S 426L	As above with addition of J 7 lengthening bar



S 436	COMPOSITE SET
J 3	Compass half set with J 15 pencil, J 16 divider and J 17 pen points
J 61	Spring bow pencil
J 14	Spare handle for use with compass points J 15, J 16, J 17
*J 21P	Plastic container, spare leads
S 436L	As above with addition of J 7 lengthening bar



S 446	PENCIL SET
J 46	Pencil compass (supplied with needle point for conversion to dividers)
J 61	Spring bow pencil
*J 21P	Plastic container, spare leads

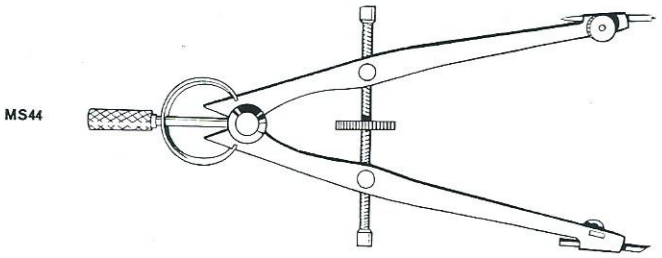
*J 21P Plastic container includes .08″ needle point for conversion, where applicable, of J 46, J 61 and J 15 for use as dividers.

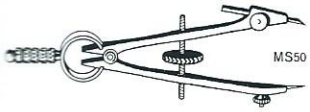
Details of separate instruments are shown on page 7.

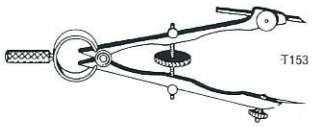
Separate drawing instruments, Professional ranges

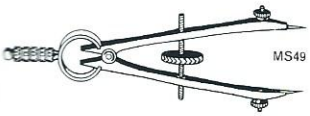
Lamsin stainless finish

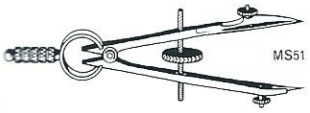
These instruments have been designed for the professional user and senior technical student and are individually packaged and marked with catalogue number and price. Compasses and dividers have ball bearing self-centring heads set at the factory and no further adjustment is required. All instruments are guaranteed and will give a lifetime of service if treated with reasonable care and attention. Spare parts are obtainable by return of post.

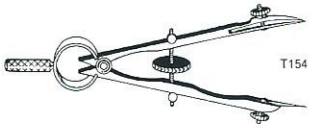


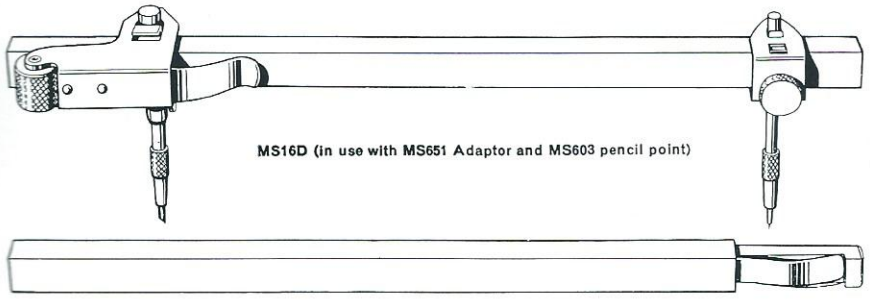


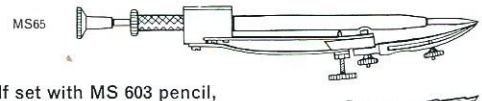












ALSO AVAILABLE IF REQUIRED

6″ Compass half sets

MS 1	Senior professional compass half set with MS 603 pencil, MS 602 divider and MS 605 pen points
MS 2	As MS 1 with addition of MS 601 lengthening bar
T 40	Standard professional compass half set with MS 603 pencil, MS 602 divider and MS 605 pen point
T 41	As T 40 with addition of T 76 lengthening bar

Miscellaneous

MS 607	Spare handle for use with compass points MS 603, MS 602, MS 605
MS 601	Lengthening bar for conversion of MS 1 to MS 2
T 76	Lengthening bar for conversion of T 40 to T 41
MS 603	Spare pencil point MS 602 Spare divider point MS 605 Spare pen point
MS 900	Screwdriver (but adjustment of compass heads by the user is not recommended)

6½″ LARGE SPRING COMPASS

MS 44	Large universal spring pencil compass (supplied with container of spare leads and needle point for conversion to dividers)
MS 54	Large universal spring compass with interchangeable points MS 603 pencil and MS 605 pen points. (Supplied with container of spare leads and needle point for conversion to dividers).

5¾″ DIVIDERS

MS 20	Senior professional dividers
T 74	Standard professional dividers

3½″ SPRING BOWS, centre screw adjustment

MS 50	Senior professional spring bow pencil
MS 49	Senior professional spring bow divider
MS 51	Senior professional spring bow pen
T 153	Standard professional spring bow pencil
T 152	Standard professional spring bow divider
T 154	Standard professional spring bow pen

Standard professional spring bows also available with side screw adjustment cat. nos. T 45B, T 45A, T 45C respectively.

BEAM COMPASS

MS 16D	Universal beam compass with fixed and movable heads, MS 650 divider point, one MS 656-10″ dural main beam and one MS 657-8½″ dural extension beam.
MS 16	As MS 16D but with MS 655-12″ hardwood beam instead of MS 656 and 657
MS 650	Spare divider point
MS 651	Adaptor for use with MS 603 pencil point and MS 605 pen point
MS 603	Pencil point (may be converted to divider point with .08″ needle)
MS 605	Pen point
MS 656	10″ Spare main beam
MS 659	20″ Main beam (as alternative to MS 656)
MS 657	8½″ Extension beam
MS 655	Hardwood beam (supplied in sizes 12″, 24″, 36″, 48″, 60″, 72″)

PEN COMPASS

MS 9	6″ Senior professional pen compass with jointed pen leg and swivel joint on pivot leg
T 9	6″ Standard professional pen compass with jointed pen leg and swivel joint on pivot leg

Note: MS 602 Divider point may be used for conversion of pen compasses into dividers.

RULING PENS

MS 85	Senior professional ruling pen, swivel nib
MS 86	Senior professional ruling pen, swivel nib, hard
T 85	Standard professional ruling pen, swivel nib

FIXED CENTRE SPRING BOW (rotating compass)

MS 65	Senior professional fixed centre spring bow, pencil and pen
MS 66	Senior professional fixed centre spring bow, pencil only
MS 630	Spare pencil point
MS 631	Spare pen point

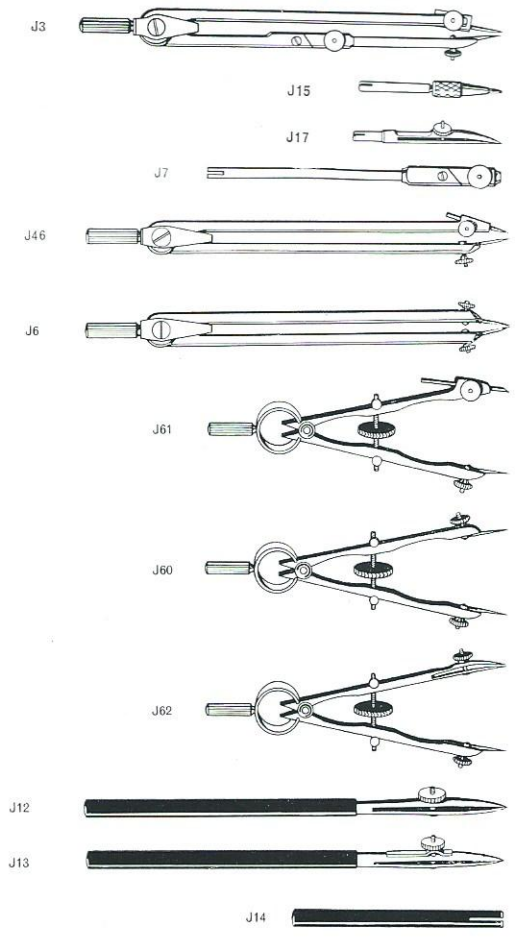
MISCELLANEOUS

MS 950	Centre piece (or horn centre)
MS 901P	Plastic container, spare leads and needles
MS 902	Container, spare leads
MS 903	Container, spare nuts and bolts
MS 1050	Spare needles for MS 20, T 74 and pivot leg of MS 9, T 9
MS 1051	Spare needles for 3½″ spring bow divider legs
MS 1052	Spare needles for pivot leg of MS 44, MS 54
MS 1053	Spare needles, .08″ diameter, for conversion of MS 44, MS 50, MS 603, T 153, T 45B for use as dividers

Separate drawing instruments, Student range

Lansin stainless finish

These instruments of the Thornton Jaywess range have been specially designed for the junior technical student and are individually packaged and marked with catalogue number and price. Compasses and dividers have ball bearing self-centring heads. All instruments are guaranteed and will give a lifetime of service if treated with reasonable care and attention. Spare parts are obtainable by return of post.



5″ COMPASS HALF SETS and accessories

J 3	Compass half set with J 15 pencil, J 16 divider and J 17 pen points
J 2	Compass half set with J 15 pencil, J 16 divider and J 17 pen points and J 7 lengthening bar
J 7	Lengthening bar
J 15	Spare pencil point
J 16	Spare divider point
J 17	Spare pen point

5″ PENCIL COMPASS AND DIVIDERS

J 46	Pencil compass (supplied with spare leads and needle point for conversion to dividers)
J 6	Dividers

3½″ SPRING BOWS, centre screw adjustment

J 61	Spring bow pencil
J 60	Spring bow divider
J 62	Spring bow pen

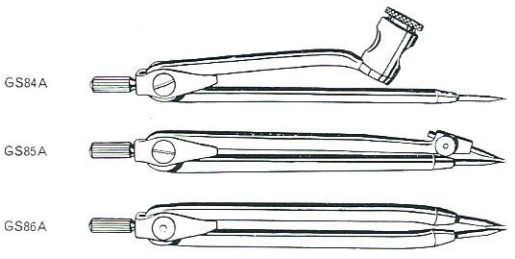
Also available with side screw adjustment cat. nos. J 9, J 8, J 10 respectively

RULING PENS

J 12	Spring nib pattern
J 13	Lever pattern

MISCELLANEOUS

J 14	Spare handle for use with compass points J 15, J 16, J 17
J 21P	Plastic container—spare leads
J 19	Spare needles for 5″ compass and dividers
J 20	Spare needles for spring bow divider legs
J 38	Spare needles .08″ diameter, for conversion of J 46 and J 61 to dividers



4¾″ MATHEMATICAL INSTRUMENTS

SCHOLASTIC, nickel plated

These mathematical instruments are of a high functional standard and have been designed for general purpose school use where good quality instruments are desirable.

GS 84A	Pencil compass for use with standard type pencil
GS 85A	Pencil compass for use with pencil lead
GS 86A	Dividers
GS 84	As GS 84A but special finish
GS 85	As GS 85A but special finish
GS 86	As GS 86A but special finish

The new Thornton Versatility drawing instrument cases

Patent applied for

These cases are similar to the orthodox type of drawing instrument case except that the interior is fitted with resilient linings in the lid and the base instead of the velvet or satin pad and velvet covered blocking. The main advantages are as follows:

1 INDIVIDUAL SELECTION OF CONTENTS

2 VERSATILITY OF CONTENTS

3 BETTER PROTECTION

4 HIGHER PRODUCTIVITY

5 GREATER CLEANLINESS

The new Versatility cases are fitted with resilient pressure pads in the base and lid.

The instruments can be selected by the user to suit his personal requirements. When the lid is closed the instruments are firmly secured between the pressure pads.

As this conception dispenses with individual recesses for instruments, varying combinations can be accommodated and further items can be added when required.

This design gives better protection for the contents, points, etc, and the instruments are more easily accessible. The foam plastic pressure pads are cleaner in use than the conventional velvet lining.

The cases are available in three standard sizes as follows:

P 276 SMALL SIZE 9″ x 4½″ approx.

To carry selected instruments for field or student use.

P 286 MEDIUM SIZE 11½″ x 6¾″ approx.

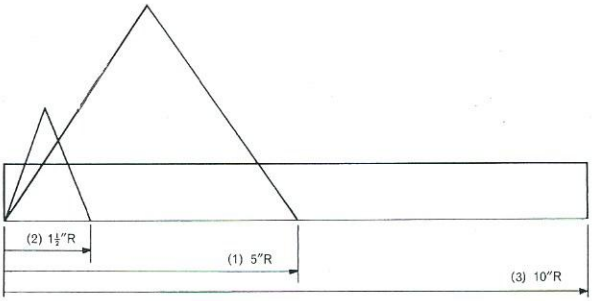
To hold a comprehensive set of instruments excluding beam compass and 12″ scales.

P 296 LARGE SIZE 13¾″ x 9¼″ approx.

To hold a comprehensive set of instruments including beam compass and 12″ scales.

The intending purchaser is recommended to obtain first the P 276 small size case for his initial requirements such as the MS 44 6½″ universal spring pencil compass and a spring bow pencil, etc. In due course, when later requirements can be more clearly foreseen, either P 286 medium size or P 296 large size can be obtained, the P 276 small size remaining available for field or student use.

The recommended instruments to cover a comprehensive range are given below. It will be observed that items 1 to 10 inclusive comprise a full set for all normal requirements. P 227 set in the senior professional series is an example of a full set but the object of the versatility principle is to enable the user to build up to the full set at the convenience of the individual as distinct from the alternative of outright purchase. Individual requirements can vary widely and everybody does not necessarily need a full set. Furthermore it is not always possible to foresee future requirements. However, by taking advantage of the versatility principle the user is more readily able to build up a set of instruments to meet individual needs and to spread the cost over a period. In this way quality instruments can be bought throughout the purchase period instead of having to buy inferior grades.

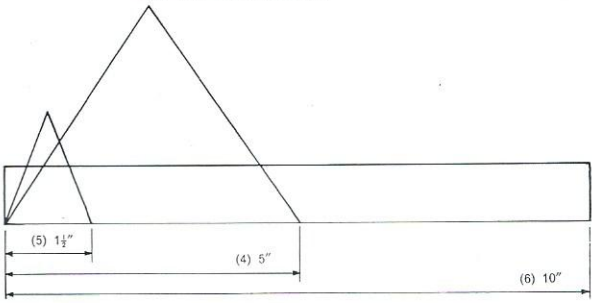


PENCIL

1 MS 44 Large Universal spring pencil compass (supplied also with needle point for optional use as a divider)

2 MS 50 (or T 153 or J 61) Spring bow pencil

3 MS 16D (or MS 16) Universal beam compass with MS 651 adaptor and MS 603 pencil point

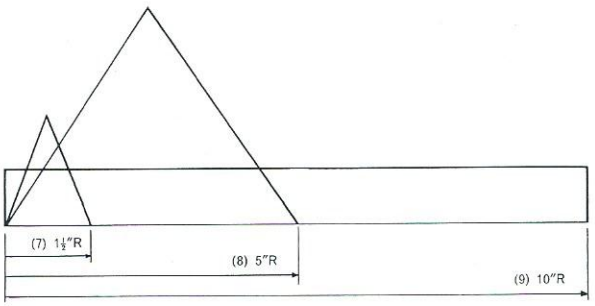


DIVIDER

4 MS 20 (or T 74) 5¾″ Dividers

5 MS 49 (or T 152 or J 60) Spring bow dividers

6 Already covered by 3



PEN

7 MS 51 (or T 154 or J 62) Spring bow pen

8 MS 9 (or T 9) Pen compass

9 As 3 but with addition of MS 605 Pen point (as supplied with MS 9 or T 9)

NOTE The above covers pencil, divider and pen circles up to approximately 10″ radius (excluding extension beam)

ADDITIONAL REQUIREMENT

10 MS 85 (or T 85) Ruling pen

OPTIONAL REQUIREMENTS

11 MS 86 Ruling pen, hard

12 MS 950 Centre piece (or horn centre)

13 MS 66 Fixed centre spring bow pencil

14 MS 631 Pen point for MS 66

ANCILLARY ITEMS

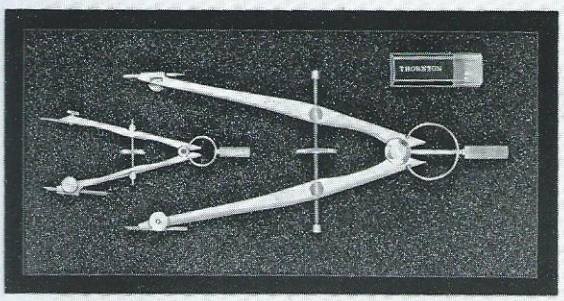
A MS 902 Container, spare leads

B MS 903 Container, spare nuts and bolts

C 12″ Boxwood or Boxwood ivorine edge scales to selection

SETS OF DRAWING INSTRUMENTS IN VERSATILITY CASES

Recommended sets of drawing instruments in the new Versatility cases are catalogued below:



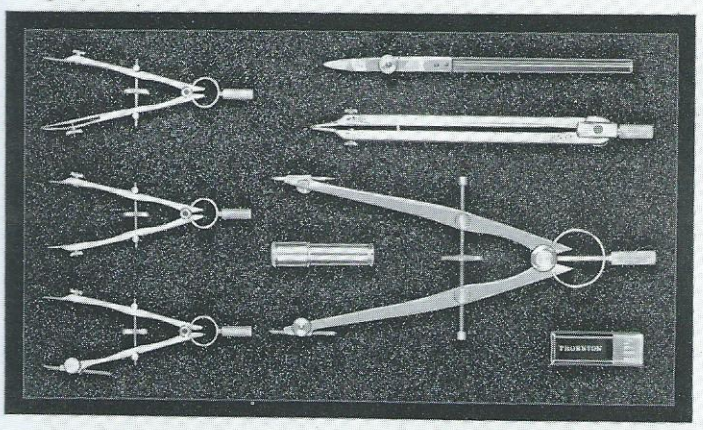
Small size

T 377 PENCIL SET

For pencil range up to 5″ radius with option of conversion to dividers

MS 44 Large universal spring pencil compass
T 153 Spring bow pencil
*MS 901P Plastic container, spare leads and needles

Complete in P 276 case



Medium size

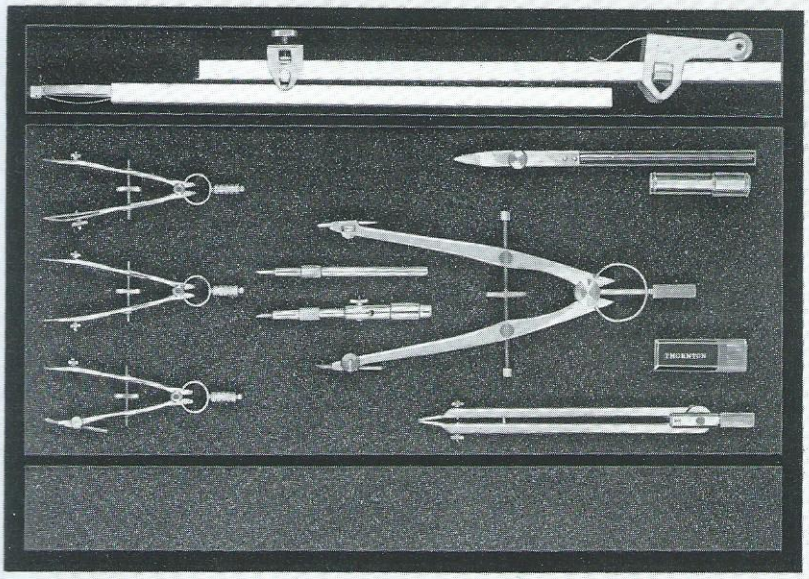
T 387 GENERAL PURPOSE SET
without beam compass

For pencil and divider range up to 5″ radius; pen spring bow and ruling pen

MS 44 Large universal spring pencil compass
T 74 Dividers
T 153 Spring bow pencil
T 152 Spring bow dividers
T 154 Spring bow pen
T 85 Ruling pen, swivel nib
*MS 901P Plastic container, spare leads and needles

Complete in P 286 case

NOTE The addition at a later stage of T 9 pen compass would complete the pen range up to 5″ radius.



Large size

P 297 GENERAL PURPOSE SET
with beam compass

For pencil and divider range up to 17″ radius; pen spring bow and ruling pen

MS 44 Large universal spring pencil compass
MS 20 Dividers
MS 50 Spring bow pencil
MS 49 Spring bow dividers
MS 51 Spring bow pen
MS 16D Universal beam compass
MS 651 Adaptor for beam compass points
MS 603 Pencil point for beam compass
MS 85 Ruling pen, swivel nib
*MS 901P Plastic container, spare leads and needles

Complete in P 296 case

NOTE (i) Provision is made in the case for inclusion of 12″ scales

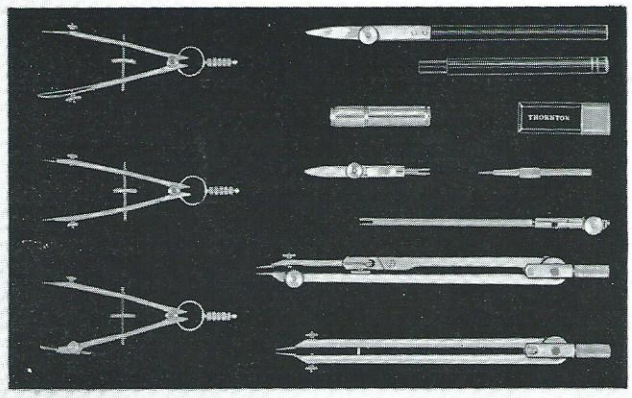
(ii) The addition at a later date of MS 9 pen compass would complete the pen range up to 17″ radius (the MS 605 pen point with MS 9 compass is also for use with the beam compass)

*MS 901P Plastic container includes .08″ needle point for conversion, where applicable, of MS 44, MS 50, T 153 and MS 603 for divider use.

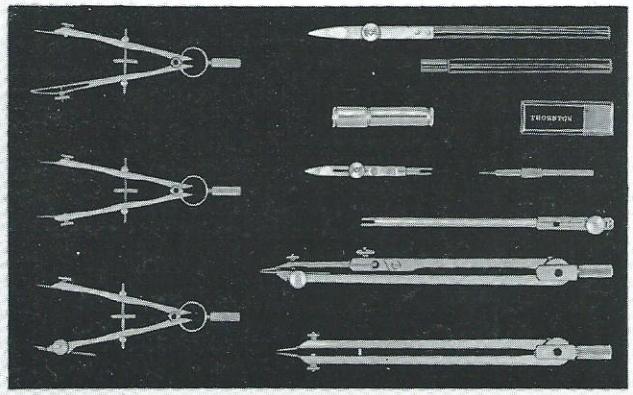
Details of example instruments are shown on page 6

Other drawing instrument sets

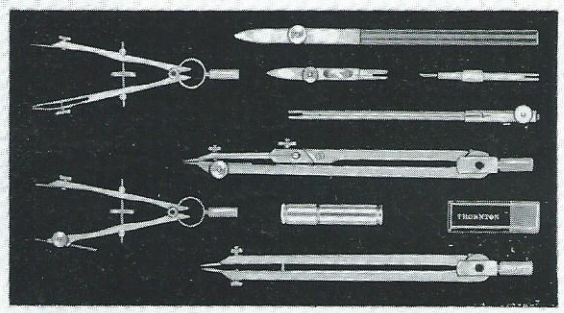
This is a selection of sets which have proved popular over the years and, subject to minor modifications, are retained from the previous range of sets.



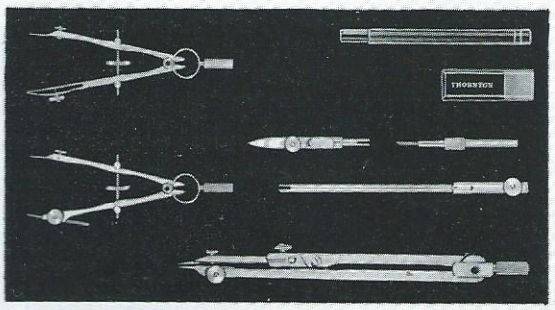
MS 225A	SENIOR PROFESSIONAL SET
MS 2	Compass half set with MS 603 pencil, MS 602 divider, MS 605 pen point and MS 601 lengthening bar
MS 20	Dividers
MS 50	Spring bow pencil
MS 49	Spring bow divider
MS 51	Spring bow pen
MS 85	Ruling pen, swivel nib
MS 607	Spare handle for use with compass points MS 603, MS 602, MS 605
*MS 901P	Plastic container, spare leads and needles
MS 903X	Container, spare nuts and bolts



T 58A	STANDARD PROFESSIONAL SET
T 41	Compass half set with MS 603 pencil, MS 602 divider, MS 605 pen point and T 76 lengthening bar
T 74	Dividers
T 153	Spring bow pencil
T 152	Spring bow divider
T 154	Spring bow pen
T 85	Ruling pen, swivel nib
MS 607	Spare handle for use with compass points MS 603, MS 602, MS 605
*MS 901P	Plastic container, spare leads and needles
MS 903X	Container, spare nuts and bolts



T 56A	STANDARD PROFESSIONAL SET
T 41	Compass half set with MS 603 pencil, MS 602 divider, MS 605 pen point and T 76 lengthening bar
T 74	Dividers
T 153	Spring bow pencil
T 154	Spring bow pen
T 85	Ruling pen, swivel nib
*MS 901P	Plastic container, spare leads and needles
MS 903X	Container, spare nuts and bolts

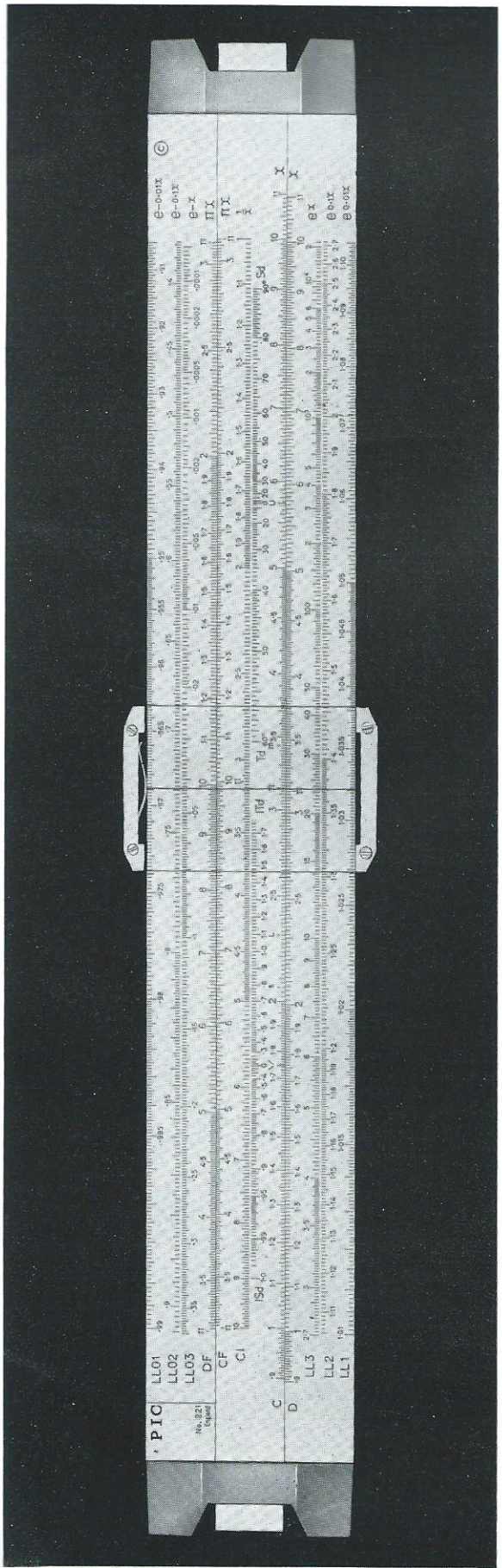


T 54A	STANDARD PROFESSIONAL SET
T 41	Compass half set with MS 603 pencil, MS 602 divider, MS 605 pen point and T 76 lengthening bar
T 153	Spring bow pencil
T 154	Spring bow pen
MS 607	Spare handle for use with compass points MS 603, MS 602, MS 605
*MS 901P	Plastic container, spare leads and needles

*MS 901P Plastic container includes .08″ needle point for conversion, where applicable, of MS 50, T 153, MS 603 for use as dividers.

The new plastic double face type PIC slide rules

These slide rules comprise four models and cover the requirements of the vast majority of slide rule users. All are double face type construction though only the No 221 comprehensive model has scales on both faces.



FEATURES OF THE NEW SLIDE RULES

1 ACCURACY

The plastic material used is eminently suitable for slide rules where variations of climatic conditions are likely to be encountered.

2 SCALES

Appropriate scale combinations have been carefully selected for the following models:

a) Comprehensive
b) Standard log log
c) Standard
d) Student

and including, where relevant, the exclusive PIC differential scales.

3 DESIGN

Logically presented scale arrangement with simplicity in scale identification and clarity in reading. Introduction of coloured figuring to indicate reverse reading. End caps to protect scales from abrasion ensure high rigidity giving positive location of the two stocks relative to each other. These end caps encourage the user to hold the slide rule at the ends, thus reducing the natural tendency to hold it towards the middle with consequent restriction on the free movement of the slide.

4 CURSOR

Single sided cursor for Standard and Student models, double sided cursor for Comprehensive model.

5 CASE

Good serviceability and durability with provision for instructions for use supplied with the slide rule.

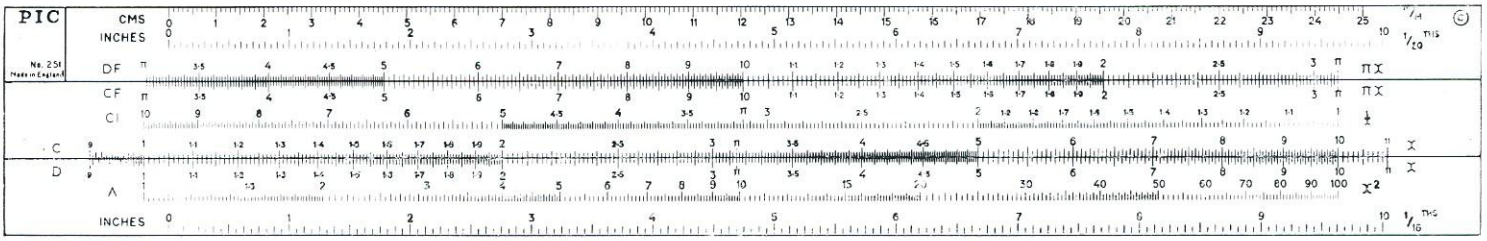
6 GUARANTEE

Covered by the PIC guarantee. If treated with reasonable care and attention the slide rule will give a lifetime of good service.

The new plastic double face type PIC slide rules

No.251 STANDARD slide rule, 10″

Recommended for general purpose use where trigonometrical and log log scales etc are not required.



Scales

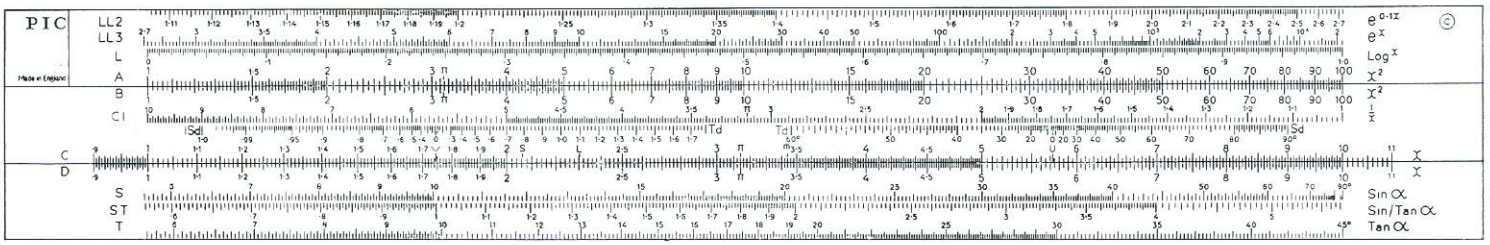
Top stock	cms in mms, inches in 20ths, DF
Slide	CF, CI, C
Bottom stock	D, A, inches in 16ths

Coverage

π displaced C and D, C and D, reciprocal of C and A scales for multiplication, division, proportions, etc, squares and square roots. Conversion scales, cms in mms to inches in 20ths to inches in 16ths.

No.241 STANDARD LOG LOG slide rule, 10″

Recommended for general purpose use where trigonometrical and log log scales are desired.



Scales

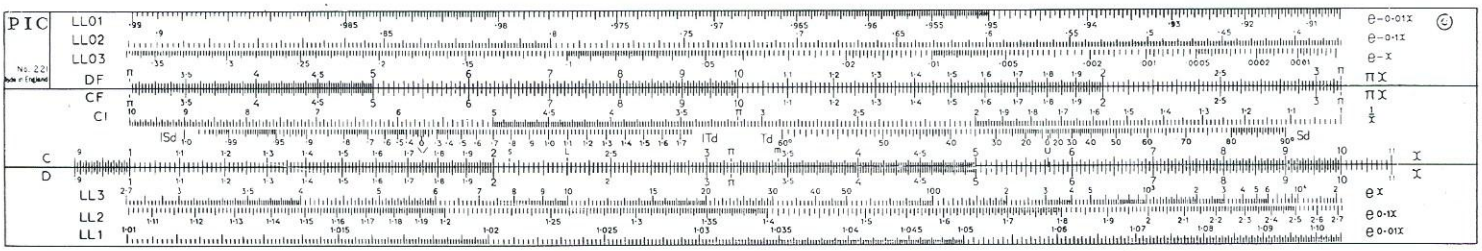
Top stock	LL2, LL3, L, A
Slide	B, CI, differential trigonometrical group, C
Bottom stock	D, S, ST, T

Coverage

Direct reading log log range 1.105 to 22,000, logarithm, A and B, reciprocal of C, C and D, with both differential and orthodox trigonometrical scales.

No.221 COMPREHENSIVE DOUBLE FACE slide rule, 10″

Face



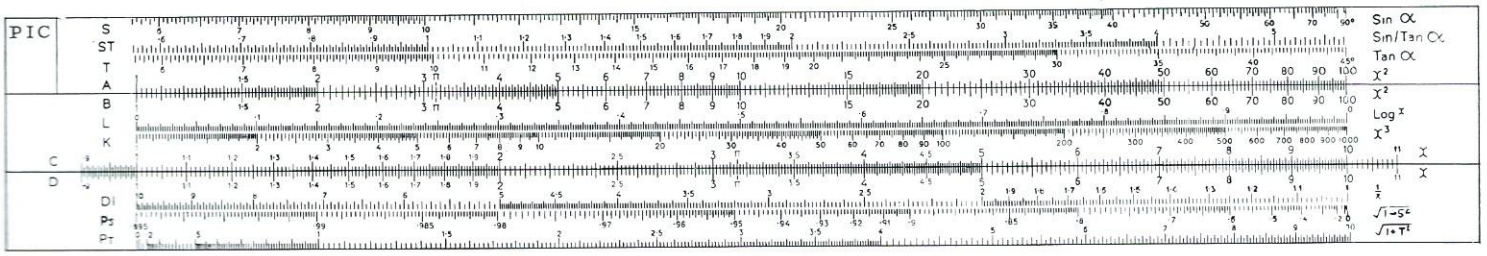
Scales – face

Top stock	LL01, LL02, LL03, DF
Slide	CF, CI, differential trigonometrical group, C
Bottom stock	D, LL3, LL2, LL1

Coverage – face

Direct reading log log range 1.01 to 22,000 and .99 to .00005, C and D, reciprocal of C, π displaced C and D, differential trigonometrical scales.

Reverse



Scales - reverse

Top stock	S, ST, T, A
Slide	B, L. K. C
Bottom stock	D, DI, Ps, Pt

Coverage – reverse

Orthodox trigonometrical scales, A and B, logarithm, cube root, C and D. reciprocal of D, vector analysis scales $\sqrt{1-s^2}$, $\sqrt{1+t^2}$

No.271 STUDENT slide rule, 10″

Recommended for general student use other than advanced student

Scales

Top stock	LL2, LL3, L, A
Slide	B, CI, differential trigonometrical group, C
Bottom stock	D, S, ST, T

Coverage

Direct reading log log range 1.105 to 22,000, A and B, logarithm, reciprocal of C, C and D, with both differential and orthodox trigonometrical scales.

The scale combination of the Student slide rule is based on that for the No.241 Standard Log Log model with the object of enabling the student to purchase a quality slide rule with both trigonometrical and log log scales.

SPARES

P 34	Spare cursor for No.271 slide rule
P 35	Spare cursor for No 241, 251 slide rules
P 36	Spare cursor for No 221 slide rule
P 36D	Cursor with adjustable magnifier for No 221 slide rule
P 44	Spare case for No.271 slide rule
P 45	Spare case for No 221, 241, 251 slide rules

DESCRIPTION OF SCALES

Scale	Functional symbol	Mathematical function	Application
A	x^2	Scale of squares on stock	For calculations involving squares and square roots
B	x^2	Scale of squares on slide	
C	x	Basic scale on slide	For multiplication, division and ratios, etc
D	x	Basic scale on stock	
CI (or RC)	$\frac{1}{x}$	Reciprocal of C scale	Continuous multiplication and division
DI	$\frac{1}{x}$	Reciprocal of D scale	Continuous multiplication and division
CF	πx	π displaced scale of C on slide	For complete factor range in multiplication or division
DF	πx	π displaced scale of D on stock	
L	Log x	Logarithm scale	Mantissae of logs to the base 10
K (or F)	x^3	Cube scale	Determination of cube roots
S	Sin α	Sine and cosine scale	Trigonometrical calculations
ST	Sin α & Tan α	Scale for lower angle range	
T	Tan α	Tangent and cotangent scale	
Sd	$\frac{\alpha}{\text{Sin } \alpha}$	Direct differential sine scale	Trigonometrical calculations — providing sine/cosine range 0° to 90°, tangent/cotangent range 0° to 60° and inverse values all to D scale accuracy
ISd	$\frac{x}{\text{Sin}^{-1}x}$	Inverse differential sine scale	
Td	$\frac{\alpha}{\text{Tan } \alpha}$	Direct differential tangent scale	
ITd	$\frac{x}{\text{Tan}^{-1}x}$	Inverse differential tangent scale	
Ps	$\sqrt{1-s^2}$	Scale of Pythagoras	Vector analysis $\sqrt{a^2-b^2}$
Pt	$\sqrt{1+t^2}$	Scale of Pythagoras	Vector analysis $\sqrt{a^2+b^2}$
LL1	$e^{0.01x}$	Log log scale 1.01 to 1.105	Exponential forms and Hyperbolic functions
LL2 (or E_1)	$e^{0.1x}$	Log log scale 1.105 to 2.72	
LL3 (or E_2)	e^x	Log log scale 2.7 to 22,000	
LL01	$e^{-0.01x}$	Log log scale .99 to .905	
LL02	$e^{-0.1x}$	Log log scale .905 to .368	
LL03	e^{-x}	Log log scale .37 to .00005	
(Y)	$\frac{x}{\log_e(1+x)}$	Direct differential log log scale	Log_e values 1.10 to 1.0 thus virtually extending the E_1 and E_2 log log scales down to unity
(Z)	$\frac{x}{e^x-1}$	Inverse differential log log scale	

NOTE: The scale designations shown in brackets apply to slide rules shown on page 14

PIC Slide rules

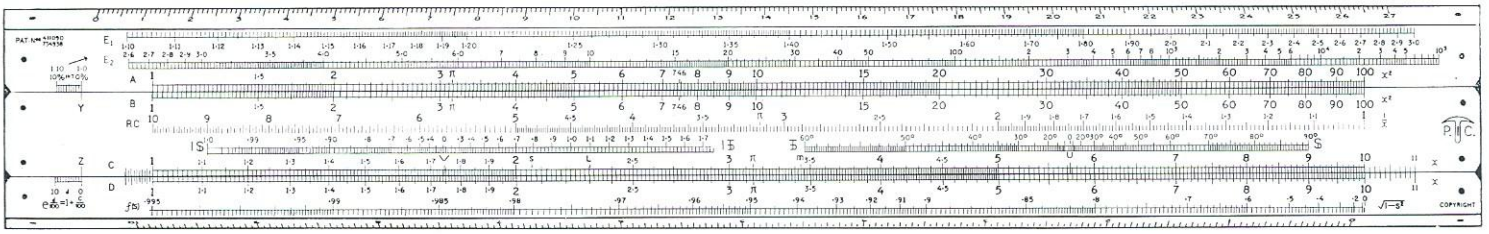
THIS IS A SELECTION OF OTHER PIC SLIDE RULES

These slide rules are supplied complete with cursor, case, and instructions for use. Three line cursors ($\pi/4$, 746) are supplied as standard on all models except F 157 and VP 150 which are fitted with a single line cursor.

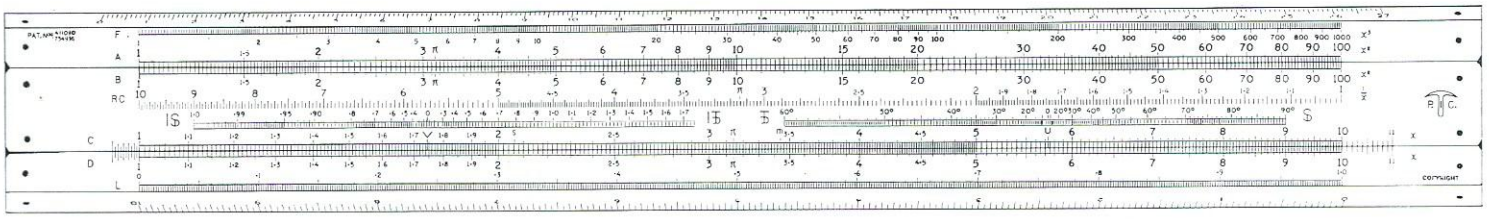
For a description of scales see page 13

CELLULOID FACED MAHOGANY 10″ MODELS

DIFFERENTIAL SERIES



No.121 COMPREHENSIVE LOG LOG slide rule, 10″
Scales — Log log 1.1 to 10^5 with log log differential group. A and B, reciprocal of C, differential trigonometrical group, C and D, $\sqrt{1-s^2}$ scale.



No.111 STANDARD (improved) slide rule, 10″
Scales — Cube root, A and B, reciprocal of C, differential trigonometrical group, C and D, logarithm

STANDARD SERIES

No. F157 STANDARD slide rule, 10″
Scales — A and B, reciprocal of C, C and D.

PLASTIC 5″ MODELS

VP 150 STANDARD slide rule, 5″
Scales — A and B, reciprocal of C, C and D

VP 114 TRIGONOMETRICAL slide rule, 5″
Scales — As No. 111

VP 124 COMPREHENSIVE LOG LOG slide rule, 5″
Scales — As No.121

CELLULOID FACED MAHOGANY 20″ MODELS

No.122 COMPREHENSIVE LOG LOG slide rule, 20″
Scales — as No.121

No.112 STANDARD (improved) slide rule, 20″
Scales — as No.111

SPARES

10″ slide rules

PC 8	Spare cursor for No.111, F 157
PC 18	Spare cursor for No.121
P 51	Spare case for all above 10″ slide rules

5″ slide rules

PC 1	Spare cursor for No VP 114
PC 2	Spare cursor for No VP 150
PC 5	Spare cursor for No VP 124
P 60	Spare case for all above 5″ slide rules

20″ slide rules

PC 9	Spare cursor for No.112
PC 10	Spare cursor for No.122
P 52	Spare case for all above 20″ slide rules

Special slide rules

PC 19	Spare cursor for F 5100

Spare cursors are normally available either single line or three line. When ordering please add suffix letter A for single line, or B for three line, viz: PC 8A, PC 8B.

Cursors for PIC slide rules not listed above are available. When ordering please specify catalogue number of slide rule and width across face of rule.

Cursors with F 4867 adjustable magnifying attachment are available for slide rules except VP 150, VP 114. When ordering please add suffix letter D for single line magnifying cursor, or E for three line magnifying cursor, viz: PC 8D, PC 8E.

PIC Slide rules

SPECIAL SERIES

No. F 5100 **RADIATION** slide rule, 18″ model

Scales as described below. Laminated mahogany construction incorporating springs, celluloid faced. Supplied with cursor in cloth covered case and instructions for use.

The Radiation slide rule provides information relating to the radiation from a black body. The values, in every case, are given directly both in watts and photons per second per square centimetre. Twin temperature scales enable values of temperature in degrees centigrade or degrees absolute to be used as convenient. The range provided is —180°C to 10,000°C. There are seven scales on the stock and six scales on each face of the reversible slide. The A and B scales on the stock and one face of the slide are in terms of Energy. Similarly the G and F scales and the other face of the slide are in terms of Photons.

The following data is provided:

1 With one setting of the cursor to the temperature concerned, the following can be read off directly:
(*a*) The radiation per unit wavelength interval at the peak of the spectrum.
(*b*) The total radiation at all wavelengths.

2 With one setting of the slide to a given temperature and one setting of the cursor to a given wavelength, the following can be read off:
(*a*) The ratio of the radiation per unit wavelength interval at the given wavelength to that at the peak of the spectrum. The wavelength range provided is 0.3 to 3000 microns.
(*b*) For any given wavelength between 0.3 and 30 microns, the fraction of the total radiation which lies in the part of the spectrum below the given wavelength.
(*c*) For any given wavelength between 30 and 3000 microns, the fraction of the total radiation which lies in the part of the spectrum above the given wavelength.

Multiplication of the results obtained under 1 and 2 above can be effected by means of multiplying scales on the slide, which enables the value of the total radiation in any wavelength interval to be obtained for any temperature. In the case of radiation from a non-black body, these multiplication scales can also be used to multiply by the emissivity.

Other features are:

(i) Subsidiary scales for further extension of the temperature and wavelength scales
(ii) A scale relating wavelength, wave number, and photon energy in electron volts
(iii) Data and instructions on the back of the rule

PIC DIFFERENTIAL SCALES

These are exclusive scales which are used as Divisor Correctives in conjunction with D scale.

DIFFERENTIAL TRIGONOMETRICAL SCALES

Sine differential (Sd) scale of $\frac{\alpha}{\text{Sin } \alpha}$ — For sine range 0° to 90°

Tangent differential (Td) scale of $\frac{\alpha}{\text{Tan } \alpha}$ — For tangent range 0° to 60°

Inverse sine differential (ISd) scale of $\frac{x}{\text{Sin}^{-1}x}$ — For inverse of Sd scale

Inverse tangent differential (ITd) scale of $\frac{x}{\text{Tan}^{-1}x}$ — For inverse of Td scale

Method of use: *eg* To find Sin α (when $\alpha = 43°$)

Since $\text{Sd}\alpha = \frac{\alpha}{\text{Sin } \alpha}$ then $\text{Sin } \alpha = \frac{\alpha}{\text{Sd}\alpha}$

Set cursor to α on D scale (*ie* D_{43}), bring the α value of 43° on the Sd scale to the cursor and at C_{10} read the value of Sinα on D scale.

Sinα = .6820

The Td scale and the inverse scales ISd and ITd are used in a similar manner, all giving, as in the example above, a consistently high accuracy to D scale.

DIFFERENTIAL LOG LOG EXTENSION SCALES

Y scale of $\frac{x}{\text{Log}_e (1+x)}$ — Covers $\log_e$ values 1.10 to 1.0 (thus virtually extending the LL2, LL3 scales down to Unity)

Z scale of $\frac{x}{e^x - 1}$ — Inverse of Y scale

Y scale is a direct differential log log scale which enables the cursor to be placed at the log log $(1 + x)$ position, and with the cursor so placed the significant figures of $\text{Log}_e (1 + x)$ can be read directly from D scale.

Z scale is an inverse differential log log scale which enables evaluation of $e^{\frac{d}{100}}$, $e^{\frac{d}{1000}}$ where 'd' is a D scale significant figure value. Vice versa it enables the log log readings in the 1.1 to 1.001 range that correspond to any cursor position to be determined.

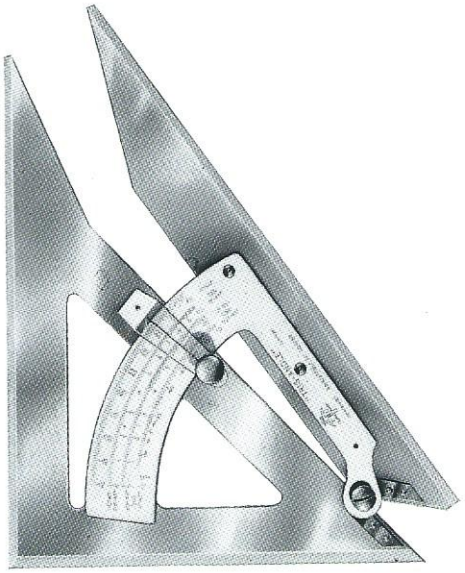
ADVANTAGES OF DIFFERENTIALISM

Slide rules incorporating the differential scales enable the user to carry out a wider and more comprehensive range of computations maintaining the consistently high accuracy of the D scale.

The differential scale principle is exclusive to PIC and is appreciated as the only design providing log log range to unity and sine and tangent range to zero angle.

PIC and Kinwest adjustable set squares

Superior in design and effectiveness — price correctly related to quality. Manufactured from finest quality transparent material with an opaque white quadrant. Scales clear and legible. All metal parts stainless finish. Supplied in strong boxes marked with catalogue number and price. Guaranteed accurate to within British Standard limits of plus or minus 3 minutes of arc.



PIC TRIG-ANGLE adjustable set square

Angle scale in half degrees, sine and cosine scales 0 to 90°, tangent scale 0 to 45°.

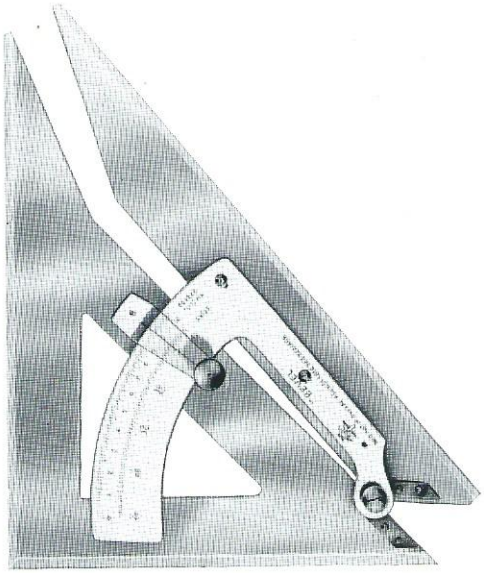
In addition to angle readings to $\frac{1}{2}°$, also provides at the same time sine, cosine and tangent readings, so obviating the need for an inverse reading of trigonometrical tables.

The instrument incorporates scales which are the equivalent tables of the relevant trigonometrical functions, so enabling the user to fix 'direction' from such measured linear data as 'base to height' or 'traverse to offset' ratios, etc.

Electrical engineers may obtain 'power factor' by setting the instrument to a resultant vector and reading cos ϕ direct at the index line. Tan ϕ and sin ϕ are also available.

For vector analysis the ratio of the co-ordinates of a vector is obtainable by a single setting.

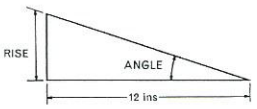
PIC 152 Square edges
PIC 153 Bevelled edges
Available in arm lengths 7″, 10″ and 12″



PIC BEVEL adjustable set square

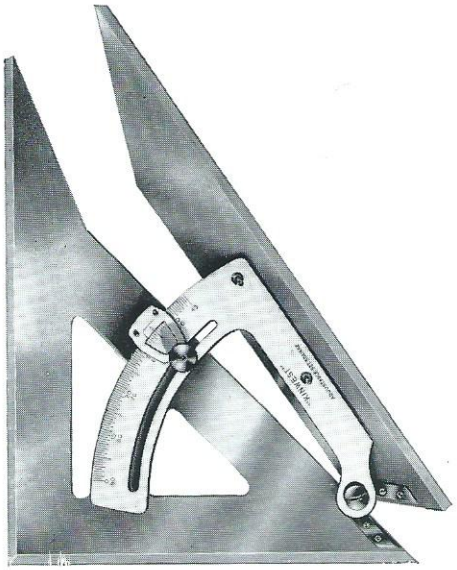
Angle scale in half degrees, bevels in inches per foot.

Incorporates scales relating angles (in half degrees) to bevels expressed in inches 'rise' per 'foot of base'. Thus, when an angle is defined by the 'rise' method 'direction' may be obtained without reference to trigonometrical tables.



'Bevel' graduations are one eighth of an inch but 16ths and 32nds may be approximated.

PIC 172 Square edges
PIC 173 Bevelled edges
Available in arm lengths 10″ and 12″



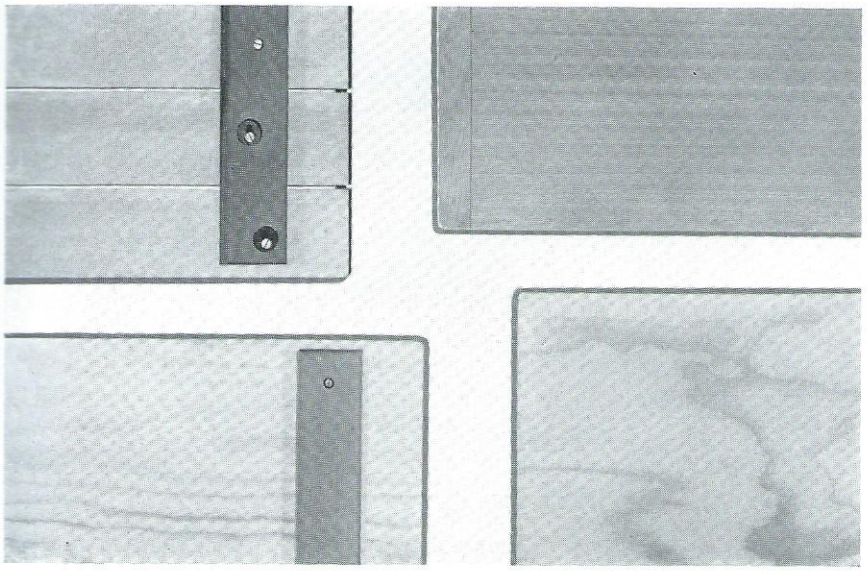
KINWEST adjustable set square

Angle scale in half degrees

Carries an angle scale accurately divided to half degrees. Like the Trig-angle and Bevel types, for a particular setting it automatically enables direction, its perpendicular and the mirror image of both to be obtained by rotation of the instrument.

F 3791 Square edges
F 3792 Bevelled edges
Available in arm lengths 7″, 10″ and 12″

Drawing boards and tee squares



ENGINEERS DRAWING BOARDS

Extra quality, made from best selected pine to BS specification 1265/58, hardwood battens, slotted and fitted metal plates and screws, ebony working edge and grooved back to allow for any shrinkage or expansion.

F 3818 23″ x 16″ F 3820 32″ x 23″ F 3821 42″ x 29″
F 3821L 42″ x 32″ F 3822 54″ x 32″ F 3823 62″ x 42″

Engineers drawing boards made to above specification but with metal edge in place of ebony. Prices on application.

STUDENTS DRAWING BOARDS

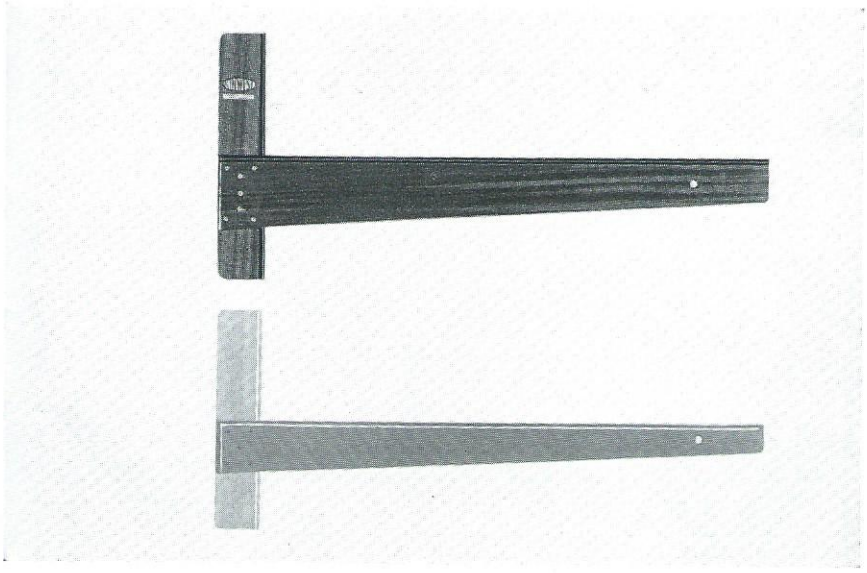
Students engineers pattern, made from selected pine, hardwood battens, fitted metal plates and screws, grooved back to allow for shrinkage or expansion.
F 3815 23″ x 16″, 32″ x 23″, $\frac{5}{8}$″ thick

Clamped pattern, joints tongued and grooved, rounded corners, best quality selected obeche.
F 3812 16″ x 11$\frac{1}{2}$″, 23″ x 16″, 32″ x 23″, $\frac{5}{8}$″ thick

Metal edged jointed pattern, made from selected softwood, fitted dove-tailed aluminium edges.
F 3814 23″ x 16″, 32″ x 23″, $\frac{5}{8}$″ thick

Plywood pattern, made from pine plywood, selected timber, sealed edges, rounded corners.
F 3811 16″ x 11$\frac{1}{2}$″, 23″ x 16″, 32″ x 23″, $\frac{1}{2}$″ thick

Plywood pattern (with battens), specification as above but fitted hardwood battens.
F 2675P 23″ x 16″, 32″ x 23″, $\frac{1}{2}$″ thick



ENGINEERS TEE SQUARES

Specially selected best quality mahogany, taper blade with bevelled edge keyed into blade, made to BS specification 1266/58.
F 3802 23″, 32″, 42″, 54″, 62″

As above but with transparent working edge, inset at an angle to the board.
F 7722 23″, 32″, 42″, 54″

STUDENTS TEE SQUARES

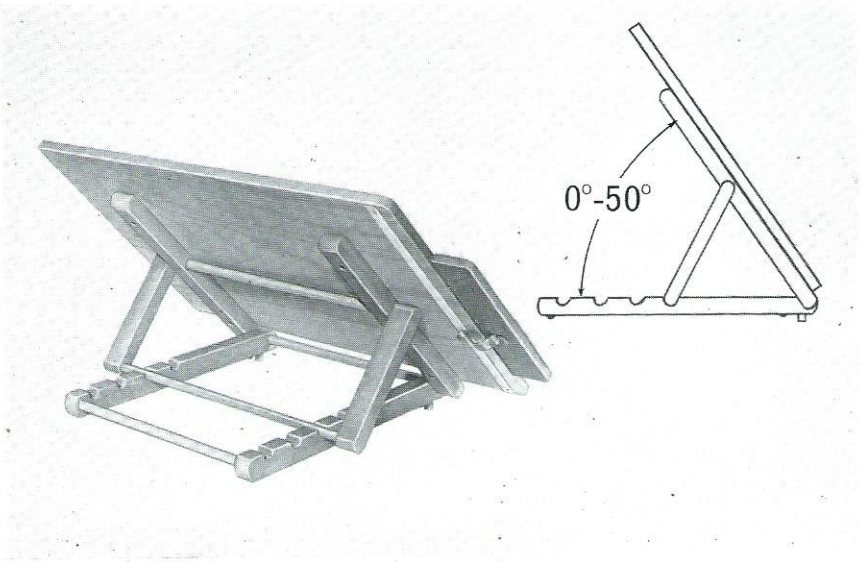
Hardwood pattern, made from selected beech, taper blade, bevelled edge, made to BS specification 1268/58.

F 5422 unpolished 16″, 23″, 32″
F 5424 polished 16″, 23″, 32″

Hardwood tee squares, made from selected beech, parallel blade.
F 3796 23″

Perspex tee squares, polished hardwood stock, transparent taper blade, bevelled edge.
F 5425 23″, 32″

Kinwest drafting unit, set squares and protractors



KINWEST STUDENTS DRAFTING UNITS

These units comprise a Students drawing board and tee square with clip, mounted in a wooden stand, angular adiustment from 0°-50°, for use on bench or table.

F 2670 Kinwest drafting unit No.1, fitted F 3811 students drawing board and F 5422 hardwood tee square 23″ x 16″, 32″ x 23″

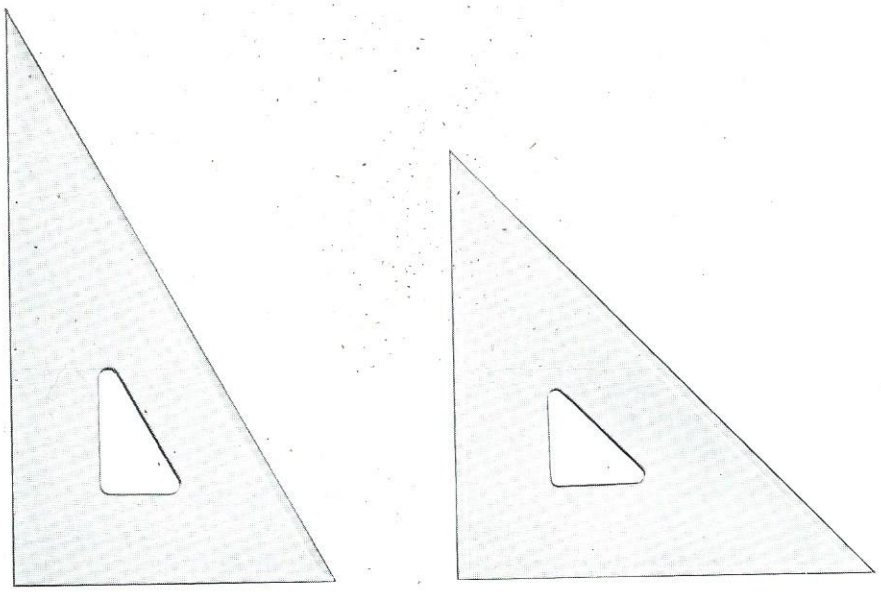
F 2671 Kinwest drafting unit No.2, fitted F 3814 students drawing board and F 5424 hardwood tee square 23″ x 16″, 32″ x 23″

F 2671C Kinwest drafting unit No.3, fitted F 3812 students drawing board and F 5424 hardwood tee square 23″ x 16″, 32″ x 23″

F 2667 Kinwest adjustable drawing board rest, hardwood, with rack adjustment from 0°-50° for use with board size 23″ x 16″

F 2668 As above, for use with board size 32″ x 23″

F 2672 Plastic carrying case for students drawing board or drafting unit 23″ x 16″



TRANSPARENT SET SQUARES

Professional quality, Perspex, bevelled edge, open centre
F 3830 45° $\frac{3}{32}$″ thick 6″ 8″ 10″ 12″ 14″ 16″ 18″
F 3831 60° $\frac{3}{32}$″ thick 8″ 10″ 12″ 14″ 16″ 18″ 20″

Professional quality, Perspex, plain edge, open centre
F 3832 45° $\frac{3}{32}$″ thick 6″ 8″ 10″ 12″ 14″ 16″ 18″
F 3833 60° $\frac{3}{32}$″ thick 8″ 10″ 12″ 14″ 16″ 18″ 20″

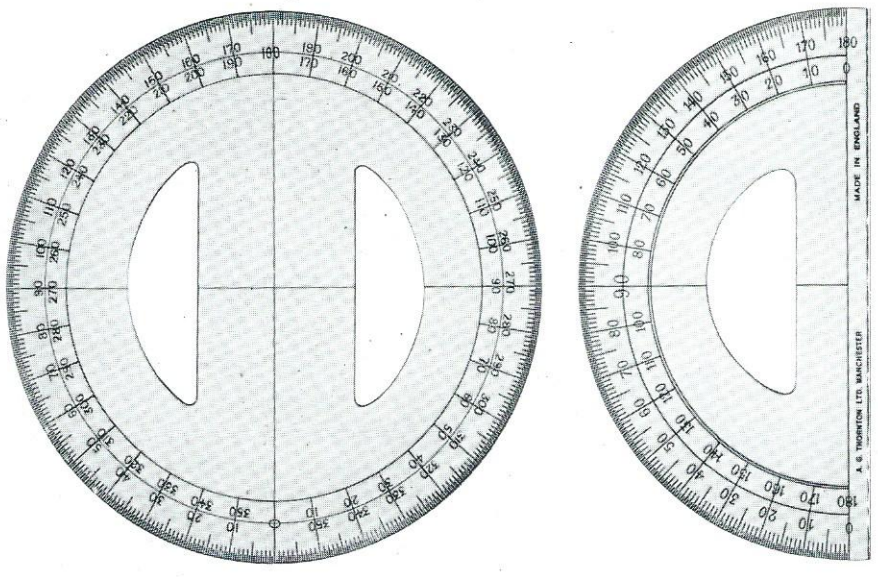
Professional quality, bevelled edge, open centre
F 4946 45° .08″ thick 6″ 8″ 10″ 12″ 14″ 16″
F 4947 60° .08″ thick 6″ 8″ 10″ 12″ 14″ 16″ 18″

Professional quality, plain edge, open centre
F 4944 45° .08″ thick 6″ 8″ 10″ 12″ 14″ 16″
F 4945 60° .08″ thick 6″ 8″ 10″ 12″ 14″ 16″ 18″

Technical quality, plain edge, open centre
F 7344 45° .06″ thick 6″ 8″ 10″ 12″
F 7345 60° .06″ thick 6″ 8″ 10″ 12″ 14″

Students quality, plain edge, open centre
F 2710 45° .05″ thick 4″ 6″ 8″
F 2711 60° .05″ thick 6″ 8″ 10″

School quality, plain edge, centre hole, plastic (non-inflammable)
F 2706 45° .03″ thick 4″
F 2707 60° .03″ thick 5″



TRANSPARENT PROTRACTORS

Protractors, transparent, made from first quality material, are available full circle or half circle, bevelled or plain edge in various qualities. They are divided on the reverse side for accuracy.

Semicircular
T 27 .03″ thick, 180° x 1° solid pattern, square edge, 4″
T 28 .04″ thick, 180° x 1° solid pattern, square edge, 5″ 6″
T 30 .05″ thick, 180° x 1° open centre, bevelled edge 4″
T 31 .05″ thick, 180° x ½° open centre, bevelled edge, 5″ 6″ 8″
F 2724B .08″ thick, 180° x ½° open centre, bevelled edge, 5″ 6″ 9″

Circular
T 33 .035″ thick, 360° x ½° solid pattern, square edge, 5″
T 34 .05″ thick, 360° x ½° solid pattern, square edge, 6″
T 36 .05″ thick, 360° x ½° open centre, bevelled edge, 6″ 8″
F 2724 .08″ thick, 360° x ½°, open centre, bevelled edge, 6″ 9″

Scales, curves, parallel rules and sundries

DRAWING SCALES

Engineers, architects and surveyors scales. Oval section. Professional quality, boxwood or boxwood celluloid edge, engine divided. When ordering please specify catalogue number, size and pattern number. Special scales can be supplied to order at an extra charge.

Cat No	Description
F 2763	Boxwood 6″
F 2764	Boxwood 12″
F 2765	Boxwood, celluloid edge, 6″
F 2766	Boxwood, celluloid edge, 12″
Patt No	**Description**
13T	$\frac{1}{8}$″, $\frac{1}{4}$″ x $\frac{1}{2}$″, 1″; $\frac{3}{8}$″, $\frac{3}{4}$″ x 1$\frac{1}{2}$″, 3″ to 1 ft open divided (Armstrong 12ths)
9T	$\frac{1}{8}$″ x $\frac{1}{4}$″; $\frac{1}{2}$″ x 1″ to 1 ft one scale each edge, fully divided
12T	$\frac{1}{8}$ size x $\frac{1}{4}$ size; $\frac{1}{2}$ size x full size, one scale each edge, fully divided
84T	Inches in 50ths x cms in mms; inches in 32nds x half size fully divided
85T	1/500ft x 1/2500ft; 1/1250ft x 6″ to 1 mile fully divided
86T	1/500ft x 1/2500ft fully divided; $\frac{1}{8}$″, $\frac{1}{4}$″ x $\frac{1}{2}$″, 1″ to 1 ft open divided

STUDENTS QUALITY BOXWOOD SCALES

Dividings designed to cover the requirements of technical students.

Cat No	Description
F 6936T	12″ Armstrong pattern, oval section, $\frac{1}{8}$″, $\frac{1}{4}$″ x $\frac{1}{2}$″, 1″; $\frac{3}{8}$″, $\frac{3}{4}$″ x 1$\frac{1}{2}$″, 3″ to 1 ft open divided, subdivided 12ths
F 6936D	As above, but subdivided 10ths.
F 6936E	As above, but subdivided 8ths
F 6936BT	As F 6936T but 6″ size
F 6450	12″ Cambridge pattern, oval section, inches in 50ths x cms in mms; inches in 32nds x half size fully divided
F 6451	12″ Devonport pattern, oval section, inches in 32nds and 50ths x cms in mms; $\frac{1}{4}$″, $\frac{1}{2}$″ x $\frac{3}{8}$″, $\frac{3}{4}$″ to 1 ft fully divided
F 6326	12″ Jaywess flat section, Armstrong pattern, $\frac{1}{8}$″, $\frac{1}{4}$″ x $\frac{1}{2}$″, 1″; $\frac{3}{8}$″, $\frac{3}{4}$″ x 1$\frac{1}{2}$″, 3″ to 1 ft open divided, subdivided 12ths

KINWEST POCKET SCALES

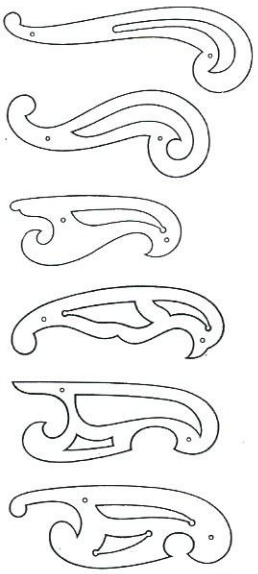
Oval section, opaque white plastic, extremely clear and easy to read. Each scale is supplied in a soft plastic slip case.

Cat No	Description
GS 500	Universal pattern, inches in 16ths x inches in 20ths; cms in mms x 5″ log unit, fully divided
GS 501	Surveyors pattern, 1/500 ft x 1/2500 ft; 1/1250 x 1/10560 ft (6″–1 mile) fully divided
GS 502	Armstrong pattern, $\frac{1}{8}$″, $\frac{1}{4}$″ x $\frac{1}{2}$″, 1″; $\frac{3}{8}$″, $\frac{3}{4}$″ x 1$\frac{1}{2}$″, 3″ to 1 ft open divided
GS 503	Architects pattern, $\frac{1}{8}$″, $\frac{1}{4}$″ x $\frac{1}{2}$″, 1″ to 1ft, open divided; 1/500 ft x 1/2500 ft, fully divided

(Particularly suitable for advertising purposes. Special prices quoted for quantities engraved with advertising matter to specification.)

CURVES to British Standard

Finest quality for general drawing office use, in compliance with the six recommended conventional shapes of British Standard 2458.

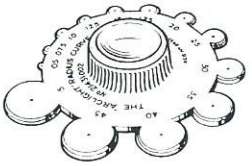


No	Type	Size
F 374A	A	10$\frac{1}{4}$″
F 374B	B	8$\frac{1}{2}$″
F 374C	C	7″
F 374D	D	8$\frac{5}{8}$″
F 374E	E	8$\frac{5}{8}$″
F 374F	F	9$\frac{1}{8}$″
F 374S	Set of 6 curves, A to F as above complete in box	

UNIVERSAL CURVE

F 5255 Transparent 8″

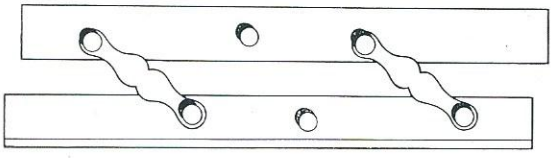
ARCLIGHT RADIUS CURVE



Supplied in strong cardboard box

F 372F	Fractional (radii $\frac{1}{32}$″ to $\frac{1}{2}$″)
F 372D	Decimal (radii .05″ to .5″)
F 372M	Metric (radii 3 to 15 mms)

BAR PARALLEL RULE



F 3879 Perspex with plated brass bars, 6″ 9″ 12″ 15″ 18″ 24″

ROLLING PARALLEL RULE

F 3888 Brass, without case, 12″ 15″ 18″ 24″
F 3893 Case for F 3888 12″ 15″ 18″ 24″

MOULDED CURVES

F 371 Set of 4 curves in box

FLEXIBLE CURVE

Square section, lead bar, encased in plastic extrusion, minimum radius of one inch.

F 6289 12″ 15″ 18″ 24″

SANDPAPER BLOCKS

F 2909	Kinwest blocks, 3″ x $\frac{7}{8}$″
F 2909L	Kinwest blocks 3″ x 2″

ERASING SHIELDS

F 3264	Kinwest, steel, nine perforations, 5$\frac{3}{8}$″ x 2$\frac{3}{4}$″
F 3264S	As F 3264, stainless finish

RADIUS AID

Supplied in plastic container

F 373F	Fractional (radii $\frac{1}{32}$″ to $\frac{1}{2}$″)
F 373D	Decimal (radii .05″ to .5″)
F 373M	Metric (radii 2 to 13 mms)

CHEMISTRY STENCIL

F 4657 Chemistry stencil No. 3 (30 designs)

DRAWING BOARD CLIPS

F 5411	Terry's spring clips, packed in boxes of 4, or cartons of 72 clips
F 5412	Lewis's spring clips, packed in boxes of 4, or cartons of 72 clips

Terms of business

HOME

Accounts

Terms — Cash with order except when a current credit account exists. All applications for credit accounts should be accompanied by at least two trade references.

Settlement

Settlement of credit accounts is due by end of month following date of invoice.

Packing

Packing cases, etc, shown as returnable will only be credited if returned in good condition within one month of invoice and their despatch duly advised.

Claims

All goods are carefully packed before despatch. Damage or discrepancies must be notified in writing within three days of date of receipt of goods both to ourselves and the Carriers. Non-arrival must be reported within ten days of date of advice.

OVERSEAS

Accounts

Orders from abroad must be accompanied by a remittance except where otherwise arranged.

Terms

Unless otherwise specified, prices quoted are nett ex-works selling prices. Packing cases, etc, are charged extra at cost.

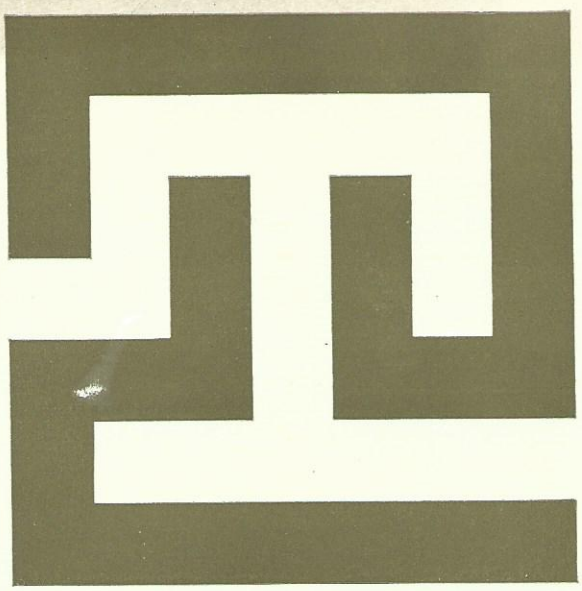
Claims

All goods are carefully packed before despatch. Advice of damage or discrepancies must be sent within three days of receipt of goods, and notice of non-arrival after a reasonable time has elapsed from receipt of invoice or advice of despatching, otherwise claims cannot be entertained.

GENERAL

The Company reserves the right to amend the specifications and prices of its products and to withdraw any goods without prior notice.

All goods offered in this catalogue are covered by the THORNTON GUARANTEE. In the event of an item being found defective through faulty material or workmanship, it will be credited on return or replaced free of charge.



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